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# A description of Bufo pusillus tadpoles (Anura: Bufonidae)

by

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## SYNOPSIS

Tadpoles of *Bufo pusillus* Mertens from the Cunene River are described and distinguished from those of *B. gariepensis* Smith.

## INTRODUCTION

The following description supplements Van Dijk's (1971) key to tadpoles of the southern African *Bufo* species. Most of the taxa occurring in this subregion can now be identified; tadpoles that are still unknown are those of a few subspecies of *vertebralis* Smith (perhaps the validity of the six described subspecies can be best assessed by a study of the tadpoles) and the localized *ngamiensis* FitzSimons, *anotis* Boulenger, *taitanus beiranus* Loveridge, and *gariepensis inyangae* Poynton. In addition, new studies of intraspecific larval variation are also required.

The six tadpoles on which this description is based are housed in the collection of the State Museum, Windhoek (Cat. No. R 25152). They were collected by Mr M. J. Penrith on 18 October 1971, at Ondarosa Falls, Cunene River, ¼° grid South East 1713 Bd. *B. pusillus* is the only member of the genus recorded from this locality. Adults were present in the same pool at the time of collection. *B. regularis* Reuss, *B. garmani* Meek, and *B. vertebralis dombensis* Bocage are the taxa recorded closest to this locality.

Descriptive characters and nomenclature are those advocated by Van Dijk (1966).

## DESCRIPTION

Size 14–17 mm, stage approximately 52 of the *Xenopus* Normal Table.

Mouth situated ventrally. Oral disc over 0,6 width of head at level of disc, not visible dorsally. A single, poorly developed row of papillae with a mental gap 0,8 disc width. Extra- and intra-marginal papillae absent.

Suprarostrodont bears slight lateral inflexions. Serrations longer than broad, borne on a base which is almost straight in normal view. Median series of serrations flanked laterally by six smaller serrations on either side. These are half as large as the median serrations. Marginal half of the suprarostrodont heavily pigmented and keratinised.

Infrarostrodont bears serrations along its entire margin. Median serrations normal to the base, lateral serrations point obliquely away from the midline. Marginal 0,8 pigmented and keratinised.

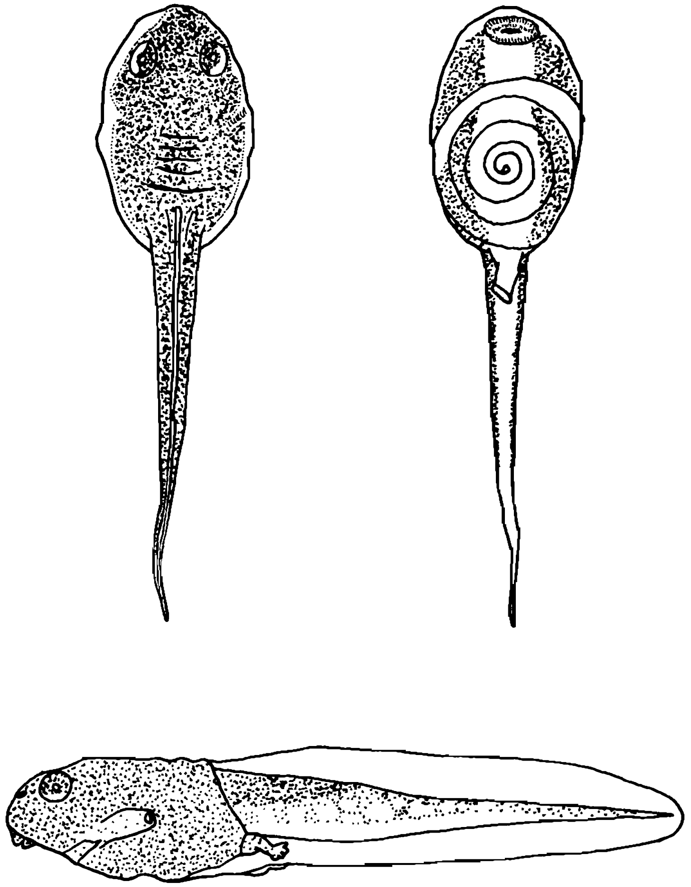

Fig. 1. Dorsal, ventral and lateral views of a *Bufo pusillus* tadpole to show the extent of pigmentation.

Keratodonts compound, tips rounded; $\frac{\text{breadth}}{\text{length}} = 0{,}14$. Two rows of supra-angular keratodonts, distal row uninterrupted, medial third of the proximal row interrupted by a gap. Three uninterrupted rows of infra-angular keratodonts, rows subequal in length.

Nostrils kidney shaped with a raised median projection on the interior margin. Nostril aperture in a slight depression. Opening dorsal, nasal passage visible frontolaterally.

Internarial ratio: $\frac{\text{width of nostril}}{\text{internarial distance}} = 0{,}09\text{–}0{,}12 \ (n=6)$

Longitudinal position of nostrils: $\frac{\text{rostronasal distance}}{\text{orbitonasal distance}} = 0{,}57$.

Orbitonasal line not visible. Pineal spot a light region.

Extra-ocular proportion:

$$\frac{\text{width of head minus distance between lateral limits of eyes}}{\text{distance between lateral limits of eyes}} = 0{,}4.$$

Spiracle single, sinistral, visible dorsally, situated 0,6 posteriorly along trunk. Opening raised, constricted, oval, visible laterally. Spiracular tube not visible. Vent basicaudal, opening flattened, medial, marginal and pointing dextrally.

$$\text{Vent ratio: } \frac{\text{proctodeal tube length}}{\text{vent width}} = 0{,}4\text{–}0{,}5\ (n=6)$$

Tail height subequal to trunk height. Tip rounded. Maximum height of dorsal fin occurs 0,6 posteriorly along tail. Maximum height of ventral fin occurs 0,57 posteriorly along tail. Fins do not originate in fleshy crests. Tail euthyoural, axis extrapolated anteriorly passes through ventral margin of eye.

$$\frac{\text{tail length}}{\text{length of head and trunk}} = 0{,}73\text{–}0{,}79\ (n=6)$$

$$\frac{\text{height of caudal muscles at base of tail}}{\text{height of trunk}} = 0{,}43$$

Dorsal pigmentation uniform dark brown. Lateral limits of eyes unpigmented. Ventral midline unpigmented, forming a pale cross with curved bars extending posteriolaterally. Tail divided into three regions: a dorsal heavily pigmented area, a median mottled area, and a ventral unpigmented area. Fins not pigmented (fig. 1).

## IDENTIFICATION USING EXISTING KEYS

In Van Dijk's keys (1966, 1971) these tadpoles come out at the correct generic placement without any problem, and in the *Bufo* key they come out as *gariepensis*. *B. pusillus* may be readily distinguished from *gariepensis* by the uniformly pigmented tail muscles: *pusillus* possesses counter-shaded tail muscles, dark dorsally, light ventrally. *B. g. gariepensis* and *B. g. nubicolus* appear not to be sympatric with *B. pusillus*. *B. g. inyangae* which is known only from Inyanga Mountains occurs within the range of *B. pusillus*. The nearest other known approach of *B. gariepensis* to the range of *B. pusillus* occurs at the southern limit of the distribution of *B. pusillus*, north and east of Swaziland, *B. g. gariepensis* and *B. g. nubicolus* occurring south and west of Mbabane.

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